

REMARKS

Applicants have corrected some minor typographical errors in claim 6 as well as corrected the multiple dependency of claim 24. Applicants have deleted the “;” which appears toward the end of claim 1. No new matter would be added to this application by entry of this amendment. No new issues would be raised by entry of this amendment as applicants are simply correcting some minor technical matters. Entry of applicants' amendment and full consideration thereof at this stage of prosecution is respectfully requested.

Upon entry of this amendment, claims 1-3, 6-21 and 23-24 will now be active in this application with claims 1-3, 6 and 23-34 being under active consideration.

REQUEST FOR RECONSIDERATION

The present invention is directed to a coating agent.

Sol-gel processes have been used to provide substrates with desired functional properties. Easy methods in which the coating adheres well to a glass substrate are still sought.

The present invention addresses this problem by providing a glassy-film coating agent comprising (1) a siloxane compound having as a polymerizable group, an unsaturated double bond or a ring-opening cyclic group; (2) an alkoxy siloxane, which does not have a polymerizable group; and (3) a tri or tetravalent metal ion. Applicants have discovered that the combination of components allows for a composition with high hardness and an affinity for the surface of the substrate as well as avoids difficulties with relaxation of stress often accompanied by the shrinkage of the film. Such a composition is nowhere disclosed or suggested in the cited prior art of record.

The rejection of claims 1-3, 6 and 23-24 under 35 U.S.C. § 103(a) over Hanson in view of Morishima and Terakawa is respectfully traversed.

The claimed invention relates to a coating agent comprising compounds represented by the following general formulae (1), (2) and (3):



where compound (1) has the polymerizable organic group  $R^1$  having an unsaturated double bond or a ring-opening cyclic group and  $R^2$  is a C<sub>1-4</sub> alkyl group. The claim recites that compounds (1) and (2) are present separately in the composition. A composition containing both compounds (1) and (2) is nowhere disclosed or suggested in the cited references.

Hanson fails to suggest a composition containing all three of the claimed elements, and in particular fails to disclose or suggest a composition in which both compounds (1) and (2) are present.

Hanson, describes a coating compositions containing an alkoxy silane of the formula  $R_x Si(OR')_{4-x}$  wherein R may be C<sub>1-6</sub> alkyl, vinyl, methoxyethyl, phenyl,  $\gamma$ -glycidoxypropyl or  $\gamma$ -methacryloxypropyl. There is no differentiation between using groups which are polymerizable and those which are not. In fact, Hanson only exemplifies, as the group R, alkyl, methoxyethyl, and phenyl, which are not polymerizable and accordingly does not suggest the combination of having groups which are polymerizable as well as having groups which are not.

In contrast, the present invention is directed to a coating composition in which siloxane compounds having polymerizable groups (formula (1)) as well as those which do not have polymerizable groups (formula (2)) are used. The claim limitation of having

compounds having polymerizable groups as well as those which do not have polymerizable groups is a claim limitation which is simply not taught by the prior art of record.

On page 3, of the outstanding official action, the disclosure at column 1, lines 56-57 of Hanson of "mixtures of alkoxy silanes" is asserted to be basis for suggesting the claim limitation of having compounds having polymerizable groups as well as those which do not have polymerizable groups.

Applicants respectfully submit that a generic disclosure of using a mixture of alkoxy silane compounds from a group of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups, **without more**, does not render the claimed invention obvious, as the generic disclosure describes a large number of variables, but does not suggest the specific selection of a mixture of alkoxy silane compounds from a group of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups.

The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious. *In re Baird* 29 USPQ2 1550, 1552 (Fed. Cir. 1994) citing *In re Jones*, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992).

There is nothing in the disclosure of Hanson to suggest the use of a mixture of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups. Moreover, the lack of differentiation between these two types of alkoxy silanes by the reference fails to provide the motivation to have selected alkoxy silanes of these two types. Since the cited reference fails to disclose or suggest the claim limitation of a mixture of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups, the claimed invention is clearly neither anticipated nor made obvious by the reference and accordingly, withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

Morishima, describes a coating fluid comprising a reaction product obtained by subjecting (A) an alkoxy silane or aryloxy silane and (B) a metal alkoxide or aryloxide to hydrolysis and condensation reaction. There is no disclosure of an alkylsiloxane having polymerizable groups much less a disclosure of a mixture of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups. Quite to the contrary, this reference would suggest only to use alkoxy silane compounds which do not have polymerizable groups.

Terakawa, discloses a correction fluid and does not suggest a glassy-film forming coating agent which contains a mixture of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups.

In light of the above, it is clear that none of Hanson, Morishima or Terakawa suggest a glassy-film-forming coating agent comprising compounds of formulae (1) and (2). In light of the deficiency of the cited references to fairly suggest the claim limitation of a mixture of alkoxy silane compounds which have polymerizable groups and those which do not have polymerizable groups, the claimed invention is clearly not obvious from the cited references and withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Application No. 09/423,606  
Reply to Office Action of November 14, 2003.

Applicants respectfully submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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